To: SHAB
From: Keith Conant, Assistant Town Biologist
1/15/03

Recruitment Strategies:

Due to a decline in the scallop fishery, and increased fishing pressure brought on by a recessive economy it has become paramount to maximize the reproductive potential of the existing scallop population. As requested I have some recommendations for SHAB that may help to ensure a scallop population in Nantucket Harbor. Weather or not this will be sufficient to maintain a commercial fishery will have yet to be seen, and by no way do these recommendations outweigh the importance to protect the natural brood stock of juvenile scallops.

Marine Department:

The Marine Department has and will continue to do spat collection. This has been the most effective way to collect juvenile scallops and can be used as an indicator as to how well the spawning and recruitment events occurred that late spring and late summer. These numbers of spat can then be used to interpret an increase or decrease in the population, and the subsequent prediction of good or bad harvests.

The experimental over winter study of ‘01 created a beneficial spawning effect from the dense collection of scallops in wire cages. The density and proximity is believed to maximize the potential of fertilization, and is a technique used to re-introduce scallops in other towns in Massachusetts. Spawning cages were loaded and placed off the West Side of Pocomo in ‘02, and will be set again for ‘03. These cages may be raised to induce spawning if the optimal temperature and weather conditions co-exist in order to further maximize spawning potential.

SHAB:

Spat collection in combination with seed relocation might prove effective management tools for increasing scallop production in Nantucket Harbor. However this will require the collaborative effort of the Marine Department, SHAB, and the fishermen and must be done with the utmost care. SHAB could act as the organizational body and employer of the fishermen who implement these tasks under the supervision of the biologists

who could then document and evaluate the effectiveness of the plan. Site selection for seed collection and placement needs to be researched for optimal habitat parameters and numbers of scallops. Ideally scallops would be collected at the end of the fishing season from designated areas and placed in close proximity in areas of good habitat to act as pocket spawning sanctuaries throughout the harbor. These areas should be approximately 6-8ft. deep with good eelgrass beds (see spawning sanctuaries map). In close proximity to these beds spat lines could be set up in the early spring to potentially collect the spawn from these or other beds. More spat lines could be set in areas of the harbor where circulation maintains the larval spat in the water column until attachment. These lines should be checked by mid to late summer, the spat released, and the lines reset for the late summer set.

Spat collection is an excellent form of propagation, but should not be relied solely upon to support a commercial industry. Many things can go wrong with this approach, not to mention the magnitude that would need to be collected in order to sustain annual harvests. Such an approach crashed a scallop fishery in the Baja of Mexico. Collections from year to year may not yield any appreciable numbers at all, as seasonal weather patterns will affect the potential success. Also most if not all of these scallops will develop growth rings, or shock rings from the handling; making them in effect by appearance legally harvestable scallops. If then harvested these scallops will never reproduce, never add back to the biomass, and never be able to contribute to the rebuilding of the population in the harbor.